

CLAIMS

WHAT IS CLAIMED IS:

1. A method for preparing a flexible magnetic insole for providing magnetotherapy to a foot, the steps comprising:

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providing a laminated sheet, said laminated sheet having a leather upper, a flexible magnetic core coupled to said leather upper, and a cushioning base coupled to said flexible magnetic core;

6 cutting an insole section from said laminated sheet; and

8 perforating said insole section to provide ventilation holes through said insole section.

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2. The method for preparing a flexible magnetic insole for providing magnetotherapy to a foot as set forth in Claim 1, wherein the step of perforating an insole section further comprises:

4 perforating said laminated sheet prior to cutting said insole section to provide a perforated insole section.

3. The method for preparing a flexible magnetic insole for providing magnetotherapy to a foot as set forth in Claim 1, wherein the step of providing laminated sheet further comprises:

4 providing a leather sheet, said leather sheet forming said leather upper;
providing a flexible magnetic sheet, said flexible magnetic sheet forming

6 said flexible magnetic core;

7, coupling said flexible magnetic sheet to said leather sheet;

8 156 providing a sheet of cushioning material, said sheet of cushioning
material forming said cushioning base; and

10 7, coupling said sheet of cushioning material to said flexible magnetic
sheet; whereby

12 a three-layer laminated sheet is provided from which flexible magnetic
insoles may be cut.

4. The method for preparing a flexible magnetic insole for providing
2 magnetotherapy to a foot as set forth in Claim 3, wherein the step of providing a
flexible magnetic sheet further comprises:

4 mixing strongly magnetizable material with an elastic binder to form a
mixture;

6 rolling said mixture into a sheet; and

magnetizing said sheet; whereby

8 said flexible magnetic sheet is produced in a controllable fashion from a
strongly magnetizable material and an elastic binder.

5. The method for preparing a flexible magnetic insole for providing
2 magnetotherapy to a foot as set forth in Claim 4, wherein said strongly magnetizable
material further comprises:

powdered or particulate strontium ferrite.

6. The method for preparing a flexible magnetic insole for providing magnetotherapy to a foot as set forth in Claim 4, wherein said elastic binder further comprises:

an elastomer selected from the group comprising neoprene, styrene-butadiene rubber (SBR), and acrylonitrile-butadiene rubber (NBR or nitrile).

7. The method for preparing a flexible magnetic insole for providing magnetotherapy to a foot as set forth in Claim 4, wherein said step of mixing strongly magnetizable material with an elastic binder further comprises:

mixing strongly magnetizable material with an elastic binder, stearic acid, and a mold-release agent.

8. The method for preparing a flexible magnetic insole for providing magnetotherapy to a foot as set forth in Claim 7, wherein said step of mixing strongly magnetizable material with an elastic binder further comprises:

mixing zinc oxide with said strongly magnetizable material, elastic binder, stearic acid, and mold-release agent, said zinc oxide providing cross linking of said elastic binder.

9. The method for preparing a flexible magnetic insole for providing

2 magnetotherapy to a foot as set forth in Claim 4, wherein said step of rolling said
mixture into a sheet further comprises:

4 rolling and pressing said mixture at an elevated temperature to cure said
mixture and to provide a magnetizable sheet.

10. The method of preparing a flexible magnetic insole for providing
2 magnetotherapy to a foot as set forth in Claim 9, wherein said step of rolling and
pressing said mixture further comprises:

4 providing a nylon mesh; and

rolling and pressing said nylon mesh with said mixture; whereby

6 said nylon mesh is incorporated into said magnetizable sheet and
provides mechanical support and greater strength to said magnetizable sheet.

11. The method for preparing a flexible magnetic insole for providing
2 magnetotherapy to a foot as set forth in Claim 4, wherein said step of magnetizing said
sheet further comprises:

4 providing a magnetizing press having first and second jaws, said first jaw
incorporating permanent magnets having a first polarity configuration, said
6 second jaw incorporating permanent magnets having a second polarity
configuration, said second polarity configuration being the opposite polarity of
8 said first polarity configuration so that said permanent magnets of said first jaw
meet permanent magnets of opposite polarity in said second jaw;

10 proving a dielectric envelope for fitting between said first and second
jaws;

12 placing at least a portion of said sheet into said dielectric envelope;

 placing said dielectric envelope between said first and second jaws;

14 pressing said dielectric envelope and said sheet between said first and
second jaws; and

16 removing said sheet from between said first and second jaws; whereby

 said sheet is magnetized by said magnetizing press, said sheet more
18 easily removable from said magnetizing press by said dielectric envelope as said
dielectric envelope is not attracted to said magnetizing press and as said
20 dielectric envelope provides mechanical support for said sheet and prevents
tearing or ripping of said sheet when removed from said magnetizing press.

12. The method for preparing a flexible magnetic insole for providing
2 magnetotherapy to a foot as set forth in Claim 11, wherein said dielectric envelope
comprises a brass envelope.

13. The method for preparing a flexible magnetic insole for providing
2 magnetotherapy to a foot as set forth in Claim 11, wherein said step of pressing said
dielectric envelope and said sheet between said first and second jaws further comprises:

4 heating said sheet above a Curie temperature of said sheet to better
magnetize said sheet; and

6 cooling said sheet below said Curie temperature to fix said magnetism in
said sheet.

14. The method for preparing a flexible magnetic insole for providing
2 magnetotherapy to a foot as set forth in Claim 11, wherein said step of pressing said
dielectric envelope and said sheet between said first and second jaws further comprises:
4 pressing said dielectric and said sheet at an elevated pressure.

15. A method for preparing a flexible magnetic insole for providing magnetotherapy
2 to a foot, the steps comprising:

 providing a leather sheet, said leather sheet forming a leather upper;

 mixing strongly magnetizable strontium ferrite material with an elastic
neoprene binder, stearic acid, a mold-release agent, and zinc oxide to form a
magnetizable mixture;

 providing nylon mesh;

 rolling and pressing said magnetizable mixture with said nylon mesh,
said rolling and pressing occurring at an elevated temperature to cure said
magnetizable mixture, said nylon mesh providing mechanical support and
greater strength to said magnetizable sheet;

 providing a magnetizing press having first and second jaws, said first jaw
incorporating strongly magnetic permanent magnets having a first polarity
configuration, said second jaw incorporating strongly magnetic permanent

16 magnets having a second polarity configuration, said second polarity
configuration being the opposite polarity of said first polarity configuration so
that said permanent magnets of said first jaw are oppositely opposed said
18 permanent magnets of opposite polarity of said second jaw when said
magnetizing press is closed;

20 providing a dielectric brass envelope for fitting between said first and
second jaws;

22 placing at least a portion of said magnetizable sheet into said dielectric
brass envelope, said magnetizable sheet more easily removable from said
24 magnetizing press by said dielectric brass envelope as said dielectric brass
envelope is not attracted to said magnetizing press and as said dielectric
26 envelope provides mechanical support for said magnetizable sheet and prevents
tearing or ripping of said magnetizable sheet when removed from said
28 magnetizing press;

placing said dielectric brass envelope between said first and second jaws;

30 closing said magnetizing press;

32 pressing said dielectric envelope and said magnetizable sheet between
said first and second jaws at an elevated pressure, said magnetizable sheet
magnetized during said pressing to provide a flexible magnetic sheet;

34 heating said magnetizable sheet above a Curie temperature of said
magnetizable sheet to better magnetize said sheet;

36 cooling said flexible magnetic sheet below said Curie temperature to fix

said magnetism in said flexible magnetic sheet;

removing said flexible magnetic sheet from said magnetizing press;

coupling said flexible magnetic sheet to said leather sheet;

providing a sheet of cushioning material, said sheet of cushioning material forming a cushioning base;

coupling said sheet of cushioning material to said flexible magnetic sheet
to provide a three-layer laminated sheet from which flexible magnetic insoles
may be cut;

cutting an insole section from said laminated sheet; and

providing ventilation holes through said insole section.

16. The method for preparing a flexible magnetic insole of Claim 15, wherein said first and second polarity configurations of said first and second jaws is selected from the group consisting of:

alternating magnetic triangles, alternating magnetic squares, and series of alternating concentric circles; whereby

said magnetizable sheet is magnetized with a magnetic polarity configuration the same as said first and second jaws.